

### AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 12, line 30, with the following amended paragraph:

Referring to Fig. 4, an alternate embodiment of the invention is shown with a two-part fluorescence cell 150. The cell 150 includes a microstructured substrate 152 and a substantially flat cover 154. The cover 154 may be made of the same material as the substrate 152, or may be made of a different material. The substrate 152 has machined or embossed therein an array of ~~microgroovess~~ microgrooves 156. The longitudinal axes of the ~~microgroovess~~ microgrooves 156 are substantially parallel, and the ~~microgroovess~~ microgrooves are substantially uniform and coplanar in the array. The ~~microgroovess~~ microgrooves 156 are filled with a migration medium 158. When the cover is moved in the direction of arrow A and placed on the substrate 152, the cell 150 becomes a lightguide. Light 162 from a source 160 that enters the substrate 152 is internally reflected at the interior surfaces of the substrate 152 and the cover 154 to substantially uniformly illuminate the ~~microgroovess~~ microgrooves 156 in the array. In an alternate embodiment not shown in Fig. 4, both the substrate and the cover may be microstructured to form a wide variety of cross sectional shapes for the ~~microgroovess~~ microgrooves 156.

Please replace the paragraph beginning at page 15, line 13, with the following amended paragraph:

Referring to Fig. 8, an alternate embodiment of the invention is shown with a two-part analytical cell 250. The cell 250 includes a microstructured substrate 252 and a corresponding microstructured cover 254. The substrate 252 and the cover 254 have formed therein an array of ~~microgroovess~~ microgrooves 256. The longitudinal axes of the ~~microgroovess~~ microgrooves 256 are substantially parallel, have arcuate cross sections, and are substantially uniform and coplanar in the array. In the ~~microgroovess~~ microgrooves 256 are placed capillaries 257, each filled with a migration medium 258. When the cover is moved in the direction of arrow A and placed on the substrate 252, the cell 250 becomes a

lightguide. Light 262 from a source 260 that enters the substrate 252 is substantially internally reflected at the interior surfaces of the substrate 252 and the cover 254 to substantially uniformly illuminate the capillaries 257 in the array.

Please replace the paragraph beginning on page 15, line 23 with the following amended paragraph:

The lightguiding properties of the cells described above allow for considerable variation in array design. The internal reflection of the cell provides sufficient illumination of the capillaries or ~~microgrooves~~ microgrooves (also referred to generally herein as conduits) in the array, even if individual conduits are displaced by small amounts from their nominal positions. The conduits need not be placed at an even pitch, even in their nominal positions. The lightguiding properties of the cell make the arrays of the invention robust against inaccuracies in conduit placement during cell manufacture. However, referring to Fig. 9, a cell 314 with a close packed coplanar arrangement of conduits 318, with all conduits touching each other in the plane of the array, appears to provide the highest and most uniform illumination. In fact, the lightguiding properties of the cells described above provide uniform conduit illumination even for non-planar, close-packed arrangements. For example, the cell 414 illustrated in Fig. 10 includes capillaries 418 in a staggered, close-packed arrangement. This allows more conduits to be placed into a given fixed field of view of a detector such as a CCD camera, which maximizes the number of samples that can be analyzed simultaneously with one instrument.

Please replace the paragraph beginning on page 16, line 7 with following amended paragraph:

The lightguiding properties of the cells described above also accommodate a wide variety of conduit cross sectional shapes. Many different conduit cross sectional shapes are possible, such as circles, squares, rectangles, triangles, ellipses, and the like. However, conduits with square cross sections, including ~~microgrooves~~ microgrooves and capillaries, are preferred. The square cross sectional shape appears to provide the most uniform illumination of the array, at least when the incoming light is directed in the plane of the array

and normal to the longitudinal axes of the conduits. While not wishing to be bound by any theory, the square conduit is believed to present a flat face to the incoming light beam, which minimizes reflection and refraction out the cell. For example, referring to Fig. 11, a cell 514 is shown having an array of capillaries 518 with square cross sectional shapes. To take advantage of this optimized conduit shape for commonly used capillaries with a circular cross section, Fig. 12 shows a cell 614 constructed as a monolithic block with square internal ~~microgroovess~~ microgrooves 618. The cell 614 includes recesses 619 with a circular cross section and a mating shoulder 621 to allow secure attachment of capillaries 623 to the cell 614. This design exploits the advantages of microgrooves arrays in the detection region of the cell 614, which has fewer surfaces and a square cross sectional shape to minimize refraction, but preserves the glass capillary format for analytical separations.